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ABSTRACT

A proposed study of the differences in the way children perceive, approach, and behave in problem-solving situations is described. The behavioral measure to be used is "glancing," which has been related to outerdirectedness. Children will be given two sets of two puzzles to put together. On the basis of the number of glances and the situation in which glancing occurs, the subjects will be assigned to three categories: (A) innerdirected--task oriented and nonattentive to external stimuli; (B) outerdirected for information seeking purposes; and (C) outerdirected for non-information seeking purposes. The effectiveness of the children's performance on a concept-identification task under cue relevant and cue irrelevant conditions will be assessed, and differences in certain self-perceptions of the children in the three categories will be examined. The study will examine differences in the ways the three categories of children react to an outcome in terms of pride and shame. In addition, two self-perception variables hypothesized to mediate the outcome/affect relationship will be observed. Children will be given tasks to perform in which the outcome is ambiguous and success/failure can be manipulated. Three developmental levels will be represented in the sample of children: children just below (ages 5 and 6) and just above (ages 7 and 8) the shift from intuitive to concrete operational stages will comprise the youngest two development levels, and children age 10 will represent the third developmental level. (For related document, see PS 006 451.) (DB)

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CHILDREN'S APPROACHES TO TASKS, SELF-PERCEPTIONS, AND USE OF RELEVANT EXTERNAL CUES

by

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CHILDREN'S APPROACHES TO TASKS, SELF-PERCEPTIONS, AND USE OF RELEVANT EXTERNAL CUES

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The purpose of the present study is to examine differences in the *way* children perceive, approach, and behave in problem-solving situations. A number of investigators have noted that children have characteristic *ways* of approaching an experimental task. Some are very attentive to the task, essentially unaware of other stimuli. Others are less attentive to the task and appear to be very much aware of or even dependent upon the tester or aspects of the external environment. This phenomenon has been variously described as source vs. content orientation (McDavid, 1959), social vs. task orientation (Dreyer & Rigler, 1969; Ruble & Nakamura, 1972), investigator vs. task orientation (Keogh, 1971), and it may be related to certain cognitive style variables, such as field dependence-independence (Witkin, Dyk, Paterson, Goodenough, & Karp, 1972) and outerdirectedness (Turnure & Zigler, 1964). It is generally assumed that if problem-solving or educational variables are properly manipulated, an optimal match between the situation and individual characteristics of the child can be achieved.

Much research on problem-solving or cognitive styles has been based on a value system which assumes that one style is superior to the other. For example, Spotts and Mackler (1967) describe "the relatively high-level organization and personal differentiation which characterize the functioning of field-independent individuals and the vague, blurred, and labile mode of functioning which characterize field-dependent ones." Similarly, outer-directedness is seen as an excessive reliance on external cues with little attempt made to educe relations among problem elements (Achenbach & Zigler, 1968). In addition, both field-dependent and outerdirected functioning are seen as representing lower developmental levels or more immature approaches than field-independent and innerdirected functioning (Witkin

et al, 1962; Yando & Zigler, 1971).

In part, this value system is probably based on a belief that performance at most tasks is facilitated by an ability to screen out seemingly irrelevant, nontask stimuli present in the environment. For example, Mondani and Lutko (1969) found that underachievers attend to much to incidental, irrelevant material and not enough to the central learning task. In addition, as Turnure (1970) points out, nontask orientation is often perceived as distractibility and is thus by definition undesirable. Other studies, however, indicate that attention to external cues can be either beneficial or detrimental depending on the situation. Ward (1969) found that highly creative children gave more responses on an "instances" test in a cue-rich testing environment than in a poor environment, while low creative children were unaffected by the environment. Turnure and Zigler (1964) demonstrated that outerdirectedness could facilitate performance when the experimenter provided cues relevant to the task. Ruble and Nakamura (1972) found that field-dependent children tended to do better than field independents when the experimenter provided relevant incidental cues.

This combination of findings suggest that it might be useful to differentiate among the purposes fulfilled by an external or outerdirected orientation. No doubt in many cases outerdirectedness is in fact an approach to solving a problem by a child who has previously encountered frequent failure when attempting to solve a problem by means of his own cognitive resources (Yando & Zigler, 1971). On the other hand, outerdirectedness could represent a very effective approach to a problem. That is, some children may be seeking information from the environment that would aid in solving the problem. Their outerdirectedness is seen not so much as a failure orientation but as a flexible problem-solving strategy. The difference basically is whether the child is dependent on external sources--that is, incapable of good performance in the absence of such cues--or whether he will utilize environmental cues if they are available and relevant but is not dependent on such cues in order to perform the task.

Indirect support that this kind of distinction may be important is provided by some factor analysis results reported by White, LaCrosse, Litman, and Ogilvie (1969). On a factor labeled competence vs. incompetence, it was found that instrumental dependence clustered with behaviors on the competent end of the scale while emotional dependence on adults was related to incompetence. These two kinds of variables might look very similar at a behavioral level if context or purpose was not taken into account.

The present study will attempt to differentiate between children with respect to their purposes for their problem-solving approaches in addition to the overt behavioral differentiation as inner- or outerdirected. The behavioral measure to be used is glancing, which has been related to outerdirectedness in previous research (Ruble & Nakamura, in press; Turnure & Zigler, 1964). The children will be given two sets of two puzzles to put together. In each set, while the child works on the first puzzle, the experimenter will be assembling the second puzzle. Then the child will be given the second puzzle while the experimenter moves back and seemingly "makes notes" about something totally unrelated to the present situation. Thus, in each set, the experimenter is providing potentially relevant cues only during the first puzzle. Children who glance at the experimenter during this puzzle only will be considered as information seeking; children who glance away from the task during both puzzles will be considered to have other reasons for nonorientation to the task. The second set of puzzles is included so that the possible utility of attending to the experimenter becomes clear. During the first set, even an information-seeking child may not glance away from the tasks. However, during the second set, when it is clear that he may be asked to assemble the puzzle the experimenter is doing, he should be attentive to these obviously relevant external cues.

On the basis of the number of glances and the situation in which glancing occurs, the subjects will be assigned to three categories: A) innerdirected--task oriented and nonattentive to external stimuli; (I) outerdirected for information seeking purposes; and (C) outerdirected for

non-information seeking purposes. Two aspects of this differentiation will then be examined.

First, the effectiveness of the children's performance on a concept-identification task under cue relevant and cue irrelevant conditions will be assessed. The purpose of this investigation is to determine whether the children's task-oriented predispositions will predictably interact with situational variables relevant to learning. It is expected that group A children will perform better when the cue is irrelevant than when it is relevant since they would not be attending to external cues. Group C children should perform better when the cue is relevant than when it is irrelevant since they would supposedly be attentive to external factors no matter how useful they are. In the irrelevant cue condition, this external orientation should interfere with effective performance. Finally, Group B children should perform effectively under both conditions, since they would be able to utilize an external cue when it was relevant but would not be dependent on it if it turned out to be irrelevant.

Second, differences in certain self-perceptions of the children in the three categories will be examined. If the category divisions do in fact reflect differences in purpose of task approach, then it should be possible to differentiate the children as to how they perceive and react to their performance in a task situation.

One self-perception that might be expected to vary is subjective ratings of outcome. The children who are outerdirected in any situation (Group C) may approach tasks in this way out of a sense of relative failure. This is in line with reasoning put forth by Yando and Zigler (1971) to explain outerdirected behavior. That is, because of frequent real or perceived failure when using his own cognitive resources, the child has learned to distrust himself and to search externally for aid in solving problems. One might expect that this failure orientation would lead group C to make lower ratings of subjective outcome than either group A or B. Support for this prediction is provided by Katz (1967) who found that low achievers dispensed more self-criticisms and fewer self-approvals

than high achievers and that these self-evaluations were unrelated to actual quality of performance. According to Katz, the standards of the low achievers "were so stringent and rigid as to be utterly disfunctional. What they seem to have internalized was a most effective mechanism for self-discouragement. The child, in a sense, has been socialized to impose failure upon himself."

Another type of self-perception that should vary with the experiences and task orientation purposes that are assumed to underly the category divisions is perceptions about the causes of success and failure. Group C children have supposedly experienced consistent failure, across many situations, and at times when most of their peers have succeeded. This pattern has been found to result in attributions of failure to low ability (Frieze & Weiner, 1971). In addition, these children attempt to solve problems by relying on external cues. Thus, it would seem that any successes would be attributed to external factors--perhaps luck that the cues happened to be useful or to ease of the task.

On the other hand, groups A and B should be much more likely to perceive their outcomes as covarying with the amount of effort put forth in the task. Unlike group C, attempts to solve problems through using their own cognitive resources are assumed to have often met with success. The times that they fail are likely to be either when they do not try hard enough or when most of their peers also fail. Thus, they should attribute success to internal factors (sufficient ability plus effort) and failure either to the internal factor effort or to the difficulty of the task. It should be noted that although all children may attribute failure to an internal cause, it is more adaptive to make the attribution to lack of effort than to low ability. This is because it is possible to increase effort after failure and thus to expect success. It is not, however, as easy to increase ability, and thus failure is seen as inevitable and goal striving ceases (Weiner & Sierad, 1972).

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These two self-perceptions, subjective outcome ratings and causal attributions, should in turn influence affective reactions to success and failure. That is, a child who sets unrealistically high standards for achievement and thus less often considers his performance to be successful would tend to experience a relatively low level of pride. Additionally, the capacity to experience pride in accomplishment is related to the perceived cause of the outcome. Previous research has indicated that affective reactions to success or failure is influenced by whether the individual perceives that the outcome was internally or externally caused. Greater pride for success or greater shame for failure is related to internal attributions (Parsons & Ruble, 1972; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1972). Thus, even if the success of the performance is acknowledged, the child's pride will be enhanced if he attributes the outcome to himself (his own efforts or abilities) as opposed to some external factor such as the ease of the task.

The importance of the capacity to experience pride in accomplishment is demonstrated in part by findings in the study of White et al., (1969), mentioned earlier, that the ability to demonstrate pride was the highest loading behavior on the competence end of the competence vs. incompetence factor. Additionally, pride has been directly related to outerdirectedness in a previous study (Ruble & Nakamura, in press). Outerdirected children tended to feel less proud of their performance in kindergarten, in particular, and through second grade, while the third graders showed an opposite tendency in which innerdiercted children exhibited a lower level of pride. Finally, pride is a central variable in the well-developed theory of how an individual is motivated to achieve (Atkinson, 1964). This motivation to succeed is described as the capacity to take pride in accomplishment. The anticipation of pride is seen as the incentive for an individual to approach a task. With regard to the present investigation, it seems reasonable to make the additional hypothesis, that the anticipation of pride also affects <u>how</u> an individual approaches a task.

Thus, the present study will examine differences in the ways the three categories of children react to an outcome in terms of pride and shame. In addition, the two self-perception variables hypothesized to mediate the outcome-affect relationship will be observed. Children will be given tasks to perform in which the outcome is ambiguous and success/failure can be manipulated. Subjective ratings of outcome, perceived causes of that outcome, and their pride or shame will all be assessed following the completion of each task. It is expected that although the overt behavior of groups A and B is quite different in the way they approach a task, their self-perceptions and affective reactions to the task will be similar. On the other hand, groups A and B should differ from group C on the self-perception variables, though the overt behavior of group B and C are similar. In particular the hypotheses are:

1. Group C children will have lower ratings of subjective success than will groups A and B.
2. Group C will be more likely to attribute success to external factors and failure to lack of ability than will groups A and B.
3. Group C will exhibit a lower level of pride after success than groups A and B. (It is not clear whether shame reactions for failure should differ.)
4. Level of pride will be positively related to subjective ratings of success.
5. Level of pride and shame will be positively related to internal attributions.

Three developmental levels will be represented in the sample of children. In part, this is because it is important to determine if very young children can be differentiated according to purpose for an outer-directed approach. It is possible that young children's outerdirectedness is mainly dependency related. The strategy of utilizing external cues as an aid in problem-solving may not develop until later. Additionally, theories of outerdirectedness have assumed that children become more innerdirected with age, though the evidence on this point is equivocal (Yando & Zigler, 1971). It will be useful to determine how differentiating outerdirectedness as to purpose affects the developmental trend.

Other reasons for varying developmental level are related to the self-perception factors. First, the ability to make cognitive judgments develops with mental age, with the shift from intuitive to concrete operational thinking at about age 7 being especially important to this ability (Inhelder & Piaget, 1958). In particular, the child appears to move from a focus on outcomes as the basis for evaluation to a recognition of the importance of internal or intentional elements, such as effort, in making judgments (Weiner & Peter, 1972; Bailer, 1961). In addition, children at the younger stage are not always able to relate two or more bits of information in the proper way (Atwood, 1969; Kempler, 1971).

The second way age might affect self-perceptions is by length of exposure to certain experiences or social realities. For example, Weiner and Peter (1972) report that while effort becomes more important than outcome as a determinant of achievement evaluations by the age of 10-12 years, outcome once again becomes more salient than effort after age 12, although effort remains an important factor. This switch back to the more "primitive" judgmental dimension was considered to be a reflection of what society reinforces--"...in our society achievement products, not effort, count" (Weiner & Peter, p. 23). A second example is the interpretation of the finding discussed earlier that the younger outerdirected children had a lower overall level of pride, but by third grade their level of pride was higher than the innerdirected children (Ruble & Nakamura, in press). This reversal may be seen as a sort of habituation effect. That is, even if outerdirected children continue to attribute their failure to internal factors, they eventually adapt to their frequent failures and are not as intensely affected as they once were.

These findings suggest that the results of the present study, pertinent to the above hypotheses, may be affected by developmental level. In order to best examine this possibility, children just below (ages 5 and 6) and just above (ages 7 and 8) the shift from intuitive to concrete operational stages will comprise the youngest two developmental levels.

Assessment of cognitive stages will be done according to procedures described by Atwood (1969). Selecting children fairly close in age but at different cognitive levels will allow maximum exploration of the effect of the shift in stages on the relationships among the self-perception variables and task-oriented predispositions. Finally, the effect of experience on these variables will be examined by selecting children a few years older (age 10) to represent the third developmental level.

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